In the Claims

CLAIMS

1. (Currently amended) A system for flushing at least one closed internal space of an objective, the at least one closed internal space comprising a plurality of openings for delivering a gas into the at the least one closed internal space, flushing being performed by mixing at least two inert gasses in such a way that the refractive index resulting therefrom corresponds at least approximately to the refractive index of air; and

wherein the at least two inert gases are devoid of oxygen.

Claim 2 (canceled).

3. (Original) The system as claimed in claim 1, wherein the objective is provided as an exposure projection objective for semiconductor lithography.

4. (Previously presented) The system as claimed in claim 1, wherein in the case of use of two inert flushing gasses, the refractive index of one flushing gas is above that of air, and the refractive index of the second flushing gas is below that of air.

5. (Original) The system as claimed in claim 4, wherein nitrogen is used as first flushing gas, and an inert gas is used as second flushing gas.

6. (Original) The system as claimed in claim 4, wherein helium is used as inert gas.

7. (Original) The system as claimed in claim 4, wherein krypton is used as inert gas.

8. (Original) The system as claimed in claim 4, wherein xenon is used as inert gas.

9. (Original) The system as claimed in claim 6, wherein nitrogen in a volumetric fraction of 95 to 99.5% and helium in a volumetric fraction of 0.5 to 5% are used.

10. (Original) The system as claimed in claim 9, wherein helium in a volumetric fraction of 1.1 to 1.3, preferably 1.2% is used.

Claims 11-16 (canceled).

17. (Previously presented) The system as claimed in claim 1, wherein the at least two inert gases comprises only inert gases.

Claims 18-20 (Canceled).

21. (Currently amended) A method for flushing an objective, comprising:

providing an objective having at least two lenses forming a chamber within the objective; and

flushing the chamber with gases devoid of air in such a way that the refractive index resulting therefrom corresponds at least approximately to the refractive index of air, wherein the chamber comprises different regions and wherein each region comprises a different refractive index.

22. (Currently amended) A method for flushing an objective, comprising:

providing an objective having at least two lenses forming a chamber within the objective; and

flushing the chamber with gases devoid of oxygen in such a way that the refractive index resulting therefrom corresponds at least approximately to the refractive index of air, wherein the chamber comprises a mixing gradient of gases.

23. (Previously presented) The method as claimed in claim 22, wherein the flushing comprises flushing with only inert gases.

24. (Previously presented) The method as claimed in claim 22, wherein the gases are devoid of air.

25. (Currently amended) A method for adjusting optical characteristics of an objective, comprising:

providing an objective having at least two lenses forming a chamber within the objective; ~~and~~

providing a plurality of openings in the objective to the chamber; and

adjusting a refractive index of the objective in such a way that the refractive index resulting therefrom corresponds at least approximately to the refractive index of air by providing only inert gases within the chamber, wherein one inert gas is provided in one opening and a different inert gas is provided in a different opening.

Claim 26 (canceled).

27. (Currently amended) A method for adjusting optical characteristics of an objective, comprising:

providing an objective having at least two lenses forming a chamber within the objective, the objective having a set of optical characteristics comprising at least a first refractive index; ~~and~~

changing the first refractive index to a second refractive index;

adjusting ~~a~~ the refractive index of the objective to the first refractive index in such a way that the refractive index resulting therefrom corresponds at least approximately to the refractive index of air by providing a gaseous mixture within the chamber, the gaseous mixture comprising at least about 95% by volume of nitrogen.

28. (Previously presented) A semiconductor lithography method comprising:

providing an objective having at least two lenses forming a chamber within the objective;

cleaning the objective by flushing a first gas through the chamber; and

after the cleaning, providing a second gas within the chamber different from the first gas, wherein the refractive index of the second gas corresponds at least approximately to the refractive index of air.

29. (Previously presented) The method as claimed in claim 28, wherein the first gas comprises air.

30. (Previously presented) The method as claimed in claim 28, wherein the second gas comprises a gaseous mixture devoid of oxygen.

31. (Previously presented) The method as claimed in claim 28, wherein the first gas comprises only air and the second gas comprises only inert gases.

32. (New) A method of forming and using an objective, comprising:

forming an objective by mounting at least two lenses in the objective to form a chamber within the objective;

during the forming, providing air in the chamber; and

during use of the objective, providing at least one inert gas in the chamber.

33. (New) The method as claimed in claim 32, wherein the providing of the air comprises providing only air.

34. (New) A method of forming and using an objective, comprising:

forming an objective by mounting at least two lenses in the objective to form a chamber within the objective;

during the forming, providing air in the chamber; and

during use of the objective, providing at least two inert gases in the chamber, wherein the refractive index of the at least two inert gases corresponds at least approximately to the refractive index of the air in the chamber during the forming.

35. (New) The method as claimed in claim 34, wherein the providing of the air comprises providing only air.